

PATENT SPECIFICATION

742,169



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COMPLETE SPECIFICATION

Improvements in or relating to Dividing Walls in Movable Hearth Furnaces

We, DALMINE, S.p.A., a Joint Stock Company organised under the Laws of Italy, of Dalmine (Bergamo), Italy, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to dividing walls or baffles in movable hearth furnaces.

It is known that in heating or annealing furnaces, for instance for metallurgical use having a movable hearth transposing the materials to be treated, it is necessary, to avoid excessive heat losses, that the furnace zones at higher temperature be shielded from the cooler zones, for instance those in proximity of doors for the introduction or the discharge of the materials, by means of a dividing protecting wall suspended from or supported by the side walls, and leaving below an opening of a limited height which while not hindering the movement of the hearth does not result in large heat losses.

However, it often happens that on account of mistakes in the running of the furnace, the treated material, that should have been discharged before a certain dividing wall, remains on the hearth and not being able to pass through the opening below it strikes against the lower edge of the dividing wall and damages it in such a way that it is necessary to rebuild it entirely which, besides involving considerable work, involves shutting down the furnace for a good many days in order to let it cool off.

According to the invention a construction is provided that avoids the above said inconveniences in that the direct damage caused by an occurrence of the kind indicated is less important and above all the repair, besides being quick *per se*, does

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not require the stopping of the furnace for the entire period that would be necessary for its cooling.

According to the invention there is provided a movable hearth furnace provided with a dividing wall, comprising an upper part connected in a non-removable way with the fixed structure of the furnace and by a lower part laterally removable for repairs, said two parts being in a reciprocal contact, but having no constructional connection.

An exemplary embodiment of the invention will now be described with reference to the accompanying drawing which shows a vertical section through one half of an annular continuously operable movable hearth furnace.

Referring to the drawing the furnace comprises an annular shaped tunnel having side walls 1 and a movable hearth 2 mounted on rollers running on rails. At points around the tunnel corresponding to the various temperature zones, doors, and firing means dividing walls or baffles are provided each with an upper dividing wall portion 3 suspended from a structural member 4, and provided with a lower movable dividing wall portion 5 introduced into the furnace through side openings 6 and kept in place by skewbacks 7 supported by ring-shaped concentric structural members 8.

The lower dividing wall portion 5 is pre-fabricated outside the furnace and is introduced into the latter upon a peel 9 carried by a lever 10 provided with a counterpoise 11 and with two eyes 12 and 13 located in graviecentric positions respectively for the empty peel and for the peel loaded with the weight of the wall portion 5. The wall portion 5 having been loaded, the latter is lifted by means of a crane and introduced into the furnace through openings 6, the skewback 7 being locked in position.

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position by means of tie rods 14.

The two structural members 8 are then positioned to support the skewback 7, tie rods 14 are taken away and the peel is pulled out leaving in place the wall portion 5 which completes the protecting wall, after which openings 6 are closed with an easily demountable piece of masonry when it should be necessary to fit a new dividing wall portion following the breakdown of the old one.

What we claim is:—

1. A movable hearth furnace provided with a dividing wall, comprising an upper part connected in a non-removable way with the fixed structure of the furnace and by a lower part laterally removable for repairs, said two parts being in a reciprocal contact, but having no constructional connection.

2. A furnace according to Claim 1, wherein the lower part is removable through openings left in the side walls of

the furnace, such openings being temporarily closed.

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3. A furnace according to Claim 1 or 2, wherein the lower part is supported by abutment of its ends against skewbacks.

4. A furnace according to Claim 3, wherein the skewbacks are removable.

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5. A furnace according to Claim 4, wherein each removable skewback is held in place by abutment against a structural member of the furnace.

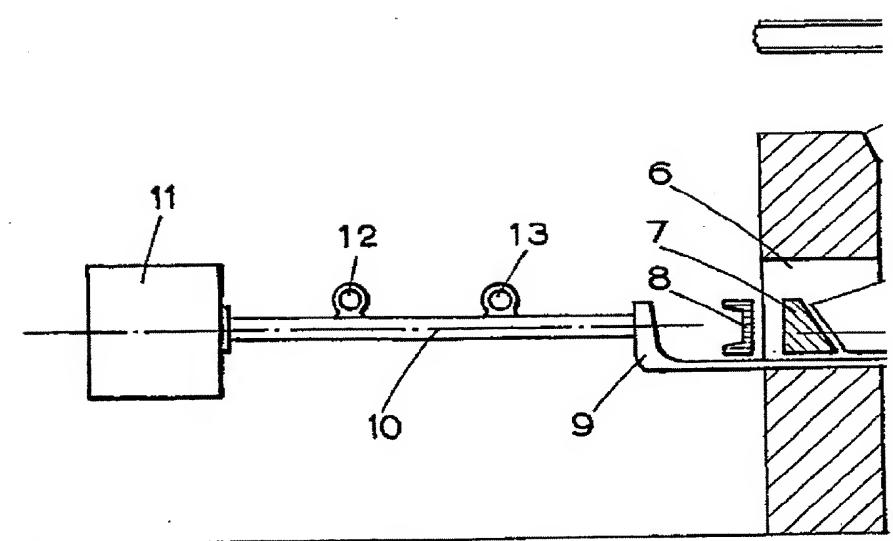
6. A furnace according to Claim 4 or 5, wherein after insertion of the lower part into the furnace, the skewbacks initially are held in place by through tie rods.

7. A construction of a movable hearth furnace, substantially as herein described with reference to the appended drawing.

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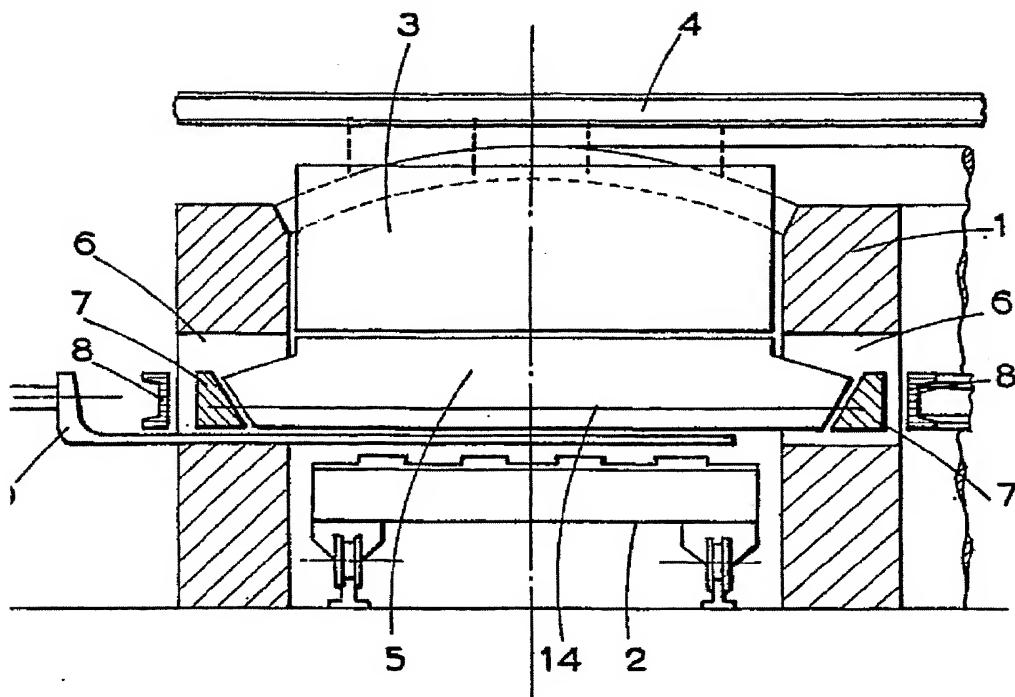


742,169

1 SHEET

COMPLETE SPECIFICATION

*This drawing is a reproduction of
the Original on a reduced scale.*



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